Posterior Hip Dislocation with Acetabular Wall and Femoral Head Fractures: A Case Report

Yim DW, Gildard M, Powers ME: Marist College, Poughkeepsie, New York

**Background:** We present the case of a posterior hip dislocation complicated by a posterior acetabular wall fracture and a femoral head fracture. A healthy twenty-two-year-old male division I club rugby athlete was running with the ball when he was tackled by two opposing players. During the tackle, his left knee directly impacted the ground while in a flexed and fixed position while his torso was forced anteriorly. The patient immediately complained of severe pain in the area of his hip and thigh and was unable to move his left leg. During physical examination his hip was found to be in a position of flexion, adduction and internal rotation. The patient was diagnosed on the field as having a posterior hip dislocation. An on-field reduction was not attempted. Instead, he was immediately immobilized to a spine board in a position of comfort and transported to the local emergency department. **Differential Diagnosis:** Pelvic ring fracture, acetabular fracture, femoral head or neck fracture, acetabular labral tear, sciatic nerve injury. **Treatment:** Radiographs taken at the emergency department revealed a posterior hip dislocation with posterior acetabular wall and medial femoral head fractures. Following a closed reduction, radiographs confirmed alignment of the femoral head however a fracture fragment was noted at the inferior aspect of the acetabulum. The patient was immediately referred to another hospital where an orthopedic surgeon performed an open arthrotomy with a posterior approach to remove the fragments. The procedure required surgical dislocation of the femoral head to obtain a clear view of all fragments. Post-surgery computed tomography (CT) scan and radiographs revealed a successful procedure with the hip complex in a concentric position. The patient was discharged six days post-surgery. **Uniqueness:** Hip dislocations are relatively uncommon during athletic events. When they do occur, they are usually associated with high-energy impact events like football and rugby. Dislocations complicated by fractures of both the acetabulum and femur are even more uncommon. These injuries generally require open reduction and internal fixation because of the instability created by the acetabular wall defect. This was not indicated for our patient however, as he was managed with a closed reduction only. **Conclusion:** Posterior hip dislocations with posterior acetabular wall and femoral head fractures are rare injuries that result from high-trauma mechanisms. When these injuries occur, early reduction procedures are indicated to reduce the risk of long-term complications such as avascular necrosis and degenerative joint disease. Post reduction imaging is then required to rule out associated fractures and intra-articular loose bodies. If loose bodies are found, as in the current case, surgical removal is necessary to prevent abrasive wear of the articular cartilage. Upon discharge, patient education regarding potential complications such as osteonecrosis of the femoral head, posttraumatic osteoarthritis and recurrent dislocation is also important. The acetabular and femoral head fractures increase the risk of posttraumatic osteoarthritis and other complications. At one year post-surgery our patient has progressed through rehabilitation and is now participating in lower extremity resistance training. However, he is still prohibited from running and participating in any contact sports. **Word count:** 507.